

REMARKS

Claims 1-35 are present in this application with claim 35 being withdrawn for being directed to a non-elected invention. Clarifying amendments have been made to claims 1, 3, 5, 6, 27, 31, and 33. Reconsideration and allowance for all claims 1-34 of the present application as amended are earnestly solicited in view of the following remarks.

Claims 1-34 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,666,276 to Hubler. This rejection is respectfully traversed.

Claim 1 recites a sealing device for providing a seal in vacuum applications about a shaft that extends between first and second pressure differential zones. The shaft is claimed to substantially extend along an axis that is collinear with a central axis of a port with the shaft having the ability to be positioned at a range of angles with respect to the central axis of the port. For example, Fig. 2 of the present application illustrates the shaft extending substantially longitudinal to the port and Fig. 3 illustrates the shaft being positioned at an angle with respect to the port. The sealing device comprises a shaft seal and a seal mount for maintaining a vacuum seal for preventing contamination of a vacuum process chamber to which the shaft extends in both the substantially longitudinal manner and at the range of angles. The flexible seal mount permits such a wide degree of motion at the range of angles by the shaft while maintaining a vacuum seal which prevents contamination of the vacuum environment. Similar to the sealing device recited in claim 1, claims 27 and 33 respectively recite a floating shaft seal for providing a vacuum seal and a device for maintaining a seal for a shaft which extends both substantially longitudinal and at a range of angles with respect to the port. Both of these seals are directed to maintaining a vacuum seal for preventing contamination of the vacuum process chamber while allowing the shaft to move at a range of angles for manipulating objects and devices within the process chamber.

Hubler is relied on to disclose a sealing device for a rotary shaft which relates to a moderate-leakage sealing device. As shown in Fig. 2, the device includes straps 22, rings 12 and 13, a sleeve 6a, a socket 3a, a lining 5a, and a wall 2a. A layer 5 of material having a low frictional coefficient lines or coats the inner surface of the socket 3 for the shaft 1. The socket 3 restrains against excessive movement of the shaft in the axial direction. A clearance between the shaft 1 and the socket 3 is defined to be as small as possible to minimize leakage therebetween while being sufficiently large enough to prevent binding when the shaft is started or decelerated.


The fluid layer 5 is intended to prevent such binding while acting as a moderate leakage sealing device for the shaft.

In contrast, the device of Hubler does disclose a seal for a shaft that is moveable in both a substantially longitudinal manner and at a range of angles with respect to a port as recited in claims 1, 27 and 33 of the present application. The shaft of Hubler only extends in a substantially longitudinal direction within the device. In fact, Hubler is directed to restraining against excessive movement of the shaft to prevent binding with the socket. As a result, Hubler does not allow a shaft with movement in both a substantially longitudinal manner and at a range of angles for manipulating objects and devices within a process chamber while maintaining a vacuum seal as claimed in the present application. Furthermore, Hubler is directed to fluid type sealing devices. Such fluid type sealing devices are insufficient for maintaining a suitable vacuum seal and thereby allowing air to contaminate the vacuum environment. The moderate or limited leakage realized in Hubler's device is insufficient for maintaining a vacuum seal of a shaft the may be moved at a range of angles in a process chamber. Accordingly, it is respectfully submitted that Hubler does not anticipate claims 1-34 of the present application and it is respectfully requested that this rejection be reconsidered and withdrawn.

For all of the above stated reasons, it is respectfully submitted that all of the outstanding rejections have been overcome. Therefore, it is requested that claims 1-34 of the present application be passed to issue for at least the above stated reasons.

If any issues remain unresolved, the Examiner is requested to telephone the undersigned attorney. Please charge any additional fees or credit any overpayments to deposit account No. 50-0896.

Respectfully submitted,
Gennady Ruderman, Applicant

By: 
Mark A. Superko, Reg. No. 34,027
Varian Semiconductor Equipment
Associates, Inc.
35 Dory Rd.
Gloucester, Massachusetts 01930-2297
Telephone: (978) 282-5915